

IN THE CLAIMS

1. (currently amended) A wireless communication system, ~~that forms comprising:~~

a network including a plurality of wireless communication apparatuses that operate in an autonomous distributed manner without any of the wireless communication apparatuses being a specific controlling station, ~~the at least one of the~~ wireless communication apparatuses including ~~system comprising:~~

a transmitting-side or receiving-side communication apparatus which attempts to perform communication in a predetermined bandwidth, issues a notification indicating a setting of a period during which availability of the predetermined bandwidth is guaranteed in a communication range so that any other communication apparatus that receives the notification does not perform a communication operation in the predetermined bandwidth during the guaranteed period,

wherein, for each predetermined frame period, regardless of whether the wireless communication apparatus system is the transmitting-side or the receiving-side communication apparatus, the wireless communication apparatus system transmits beacon information that describes information regarding the guaranteed period.

2. (cancelled)

3. (currently amended) The wireless communication system according to claim 12, wherein the receiving-side communication apparatus of the at least one wireless communication apparatus creates timing utilized for communication in the predetermined bandwidth during the guaranteed period, in a pseudo manner, that has a same state as timing of transmitting a beacon of its own and notifies the timing utilized for the communication in the predetermined bandwidth.

4. (currently amended) The wireless communication system according to claim 1, wherein, in a period in which none of the wireless communication apparatuses has set a guaranteed period,

each of the communication apparatuses performs random access based on a collision avoidance operation ~~that starts in which~~ transmission starts in response to not after detecting ~~no~~ a transmission from any another communication apparatus.

5. (currently amended) The wireless communication system according to claim 1, wherein the transmitting-side or receiving-side communication apparatus of the at least one wireless communication apparatus sets a reservation period in its own frame period and performs the communication in the predetermined bandwidth by utilizing the reservation period.

6. (currently amended) The wireless communication system according to claim 1, wherein ~~each the at least one wireless~~ communication apparatus collects beacon information from neighboring ones of the wireless communication apparatuses, obtains information regarding a period that is guaranteed to one or more of the neighboring communication apparatuses, and does not set, as its own guaranteed period, the period that is guaranteed to the one or more of the neighboring communication apparatuses.

7. (currently amended) The wireless communication system according to claim 1, wherein the transmitting-side or receiving-side communication apparatus of the at least one wireless communication apparatus collects beacon information from neighboring ones of the wireless communication apparatuses, obtains information regarding a period that is guaranteed to one or more of the neighboring communication apparatuses, and sets, as its own guaranteed period, a period that is not guaranteed to any of the neighboring communication apparatuses.

8. (currently amended) The wireless communication system according to claim 1, wherein the transmitting-side or receiving-side communication apparatus of the at least one wireless communication apparatus obtains information regarding a period that is guaranteed to another one of the wireless communication apparatuses which is located at another end of a communication and sets, as its own guaranteed period, a period that is not guaranteed to any neighboring ones of the wireless communication apparatuses.

9. - 16. (cancelled)

17. (currently amended) A wireless communication apparatus, comprising:

wireless communication means for performing a wireless communication operation over a network formed of a plurality of wireless communication apparatuses that operate in an autonomous distributed manner without any of the wireless communication apparatuses being a specific controlling station, the wireless communication apparatus being one of the plurality of wireless communication apparatuses, comprising:

communicating means for transmitting/receiving a wireless signal within its own communication range, and

guaranteed-period setting means for requesting, within its own communication range, setting of a guaranteed period during which availability of a predetermined bandwidth is guaranteed for said wireless communication apparatus, and

communication controlling means for executing a communication in the predetermined bandwidth in response to arrival of its guaranteed period,

wherein, for each predetermined frame period, regardless of whether the wireless communication apparatus is a transmitting-side or a receiving-side of a reservation communication, the wireless communication apparatus transmits beacon information that describes information regarding the guaranteed period.

18. (currently amended) The wireless communication apparatus according to claim 17, wherein the wireless communication means further comprises:

means for storing a guaranteed-period setting notification received from another one of the wireless communication apparatuses,

wherein the guaranteed-period setting means sets its own bandwidth guaranteed period while avoiding the guaranteed period that is already set by the another

wireless communication apparatus, and the communication controlling means does not perform a communication operation in the predetermined bandwidth during the guaranteed period that is set by the another communication apparatus.

19. (currently amended) The wireless communication apparatus according to claim 17, wherein in a period in which none of the wireless communication apparatuses has set a guaranteed period, the communication controlling means performs random access based on a collision avoidance operation ~~that starts in which transmission starts in response to not after detecting no a transmission from any another wireless communication apparatus.~~

20. (currently amended) The wireless communication apparatus according to claim 17, wherein the guaranteed-period setting means describes information regarding the guaranteed period in a beacon transmitted for each predetermined frame period and transmits the beacon to inform neighboring ones of the wireless communication apparatuses within its own communication range about the setting of the guaranteed period.

21. (previously presented) The wireless communication apparatus according to claim 20, wherein the guaranteed-period setting means sets its own guaranteed period by avoiding the reception timing of a beacon.

22. (previously presented) The wireless communication apparatus according to claim 20, wherein the guaranteed-period setting means creates timing utilized for communication in the predetermined bandwidth during the guaranteed period, in a pseudo manner, that has a same state as timing of transmitting its own beacon and notifies of the timing utilized for the communication in the predetermined bandwidth.

23. (previously presented) The wireless communication apparatus according to claim 17, wherein the guaranteed-period setting means sets a reservation period for performing the communication in the predetermined bandwidth in its own frame period and the communication controlling means performs the

communication in the predetermined bandwidth in its own reservation period.

24. (currently amended) The wireless communication apparatus according to claim 17, wherein the guaranteed-period setting means of ~~each—the~~ wireless communication apparatus collects beacon information from ~~its~~ neighboring ones of the wireless communication apparatuses, obtains information regarding a period that is guaranteed to one or more of the neighboring communication apparatuses, and does not set, as its own guaranteed period, the period that is guaranteed to the one or more of the neighboring wireless communication apparatuses.

25. (currently amended) The wireless communication apparatus according to claim 17, wherein the guaranteed-period setting means collects beacon information from neighboring ones of the wireless communication apparatuses, obtains information regarding a period that is guaranteed to one or more of the neighboring communication apparatuses, and sets a period that is not guaranteed to the one or more of the neighboring communication apparatuses as its own guaranteed period.

26. (currently amended) The wireless communication apparatus according to claim 17, wherein the guaranteed-period setting means obtains information regarding a period that is guaranteed to ~~a—another one of the~~ communication apparatuses which is located at another end of a communication and sets a period that is not guaranteed to any ~~neighboring~~ ones of the wireless communication apparatuses as its own guaranteed period.

27.-34. (cancelled)

35. (currently amended) A wireless communication method, for comprising:

performing a wireless communication operation over a network formed of a plurality of wireless communication apparatuses that operate in an autonomous distributed manner without any of the wireless communication apparatuses being a specific controlling station, including the wireless communication method comprising:

issuing, within a communication range of a given one of the plurality of wireless communication

apparatuses, a notification indicating a setting of a guaranteed period during which availability of a predetermined bandwidth is guaranteed to that wireless communication apparatus, and

executing, by the given wireless communication apparatus, communication in the predetermined bandwidth in response to arrival of its guaranteed period,

wherein, for each predetermined frame period, regardless of whether the given wireless communication apparatus is a transmitting-side or a receiving-side of a reservation communication, the wireless communication apparatus transmits beacon information that describes information regarding the guaranteed period.

36. (currently amended) The wireless communication method according to claim 35, further comprising:

storing, at the given wireless communication apparatus, a guaranteed-period setting notification received from another one of the wireless communication apparatuses,

wherein the step of issuing the notification indicating the setting of the guaranteed-period includes setting its own bandwidth guaranteed period while avoiding a guaranteed period set by the another communication apparatus, and

the step of executing communication in the predetermined bandwidth is not performed in the guaranteed period set by the another communication apparatus.

37. (currently amended) The wireless communication method according to claim 35, wherein in a period in which none of the wireless communication apparatuses has set a guaranteed period, random access is performed by one of the wireless communication apparatuses based on a collision avoidance operation in which starts transmission starts in response to not after detecting no a transmission from any another wireless communication apparatus.

38. (currently amended) The wireless communication method according to claim 35, wherein in the step of issuing the notification indicating the setting of the guaranteed-period, information regarding the guaranteed period is described in a beacon transmitted for each predetermined frame period and the beacon is transmitted to inform neighboring ones of the wireless communication apparatuses within its own communication range about the setting of the guaranteed period.

39. (currently amended) The wireless communication method according to claim 38, wherein in the step of issuing the notification indicating the setting of guaranteed-period, ~~its own~~ ~~the~~ guaranteed period is set by avoiding the reception timing of the beacon.

40. (currently amended) The wireless communication method according to claim 38, wherein in the step of issuing the notification indicating the setting of the guaranteed-period, timing utilized for communication in the predetermined bandwidth during the guaranteed period is created by the given wireless communication apparatus in a pseudo manner to have a same state as timing of transmitting its own beacon and a notification indicating the timing utilized for the communication is issued by the given wireless communication apparatus.

41. (currently amended) The wireless communication method according to claim 35, wherein in the step of issuing the notification indicating the setting of the guaranteed-period, a reservation period for performing the communication in the predetermined bandwidth is set by the given wireless communication apparatus in its own frame period, and in the step of executing bandwidth-guaranteed communication, the communication in the predetermined bandwidth is performed in the reservation period.

42. (currently amended) The wireless communication method according to claim 35, wherein in the step of issuing the notification indicating the setting of the guaranteed-period of each communication apparatus, beacon information is collected by the given wireless communication apparatus from neighboring ones of the wireless communication apparatuses, information regarding

a period guaranteed to one or more of the neighboring communication apparatuses is obtained by the given wireless communication apparatus, and the given wireless communication apparatus does not set the period that is guaranteed to the one or more of the neighboring communication apparatuses is not set as its own guaranteed period.

43. (currently amended) The wireless communication method according to claim 35, wherein in the step of issuing the notification indicating the setting of the guaranteed-period of a transmitting-side or receiving-side communication apparatus of the given wireless communication apparatus, beacon information is collected from neighboring ones of the wireless communication apparatuses, information regarding a period guaranteed to one or more of the neighboring communication apparatuses is obtained by the given wireless communication apparatus, and a period that is not guaranteed to the one or more of the neighboring communication apparatuses is set by the given wireless communication apparatus as its own guaranteed period.

44. (currently amended) The wireless communication method according to claim 35, wherein in the step of issuing the notification indicating the setting of the guaranteed-period, information regarding a guaranteed period is obtained from another one of the wireless communication apparatuses which is located at another end of a communication, and a period that is not guaranteed to any neighboring ones of the wireless communication apparatuses is set by the given wireless communication apparatus as its own guaranteed period.

45.-52. (cancelled)

53. (currently amended) A wireless communication system, comprising:

a network including a plurality of wireless communication apparatuses that operate in an autonomous distributed manner without any of the wireless communication apparatuses being a specific controlling station, at least one of the wireless communication apparatuses including:

a processor operable to execute computer program instructions described in a computer-readable format, the computer program for carrying out a method of

performing a wireless communication operation over the network in an autonomous distributed manner without a specific controlling station, the computer program instructions comprising:

issuing, within a communication range of the wireless communication system, a notification of a setting of a guaranteed period during which availability of a predetermined bandwidth is guaranteed to that wireless communication apparatus, and

executing a communication in the predetermined bandwidth in response to arrival of the guaranteed period,

wherein, for each predetermined frame period, regardless of whether the wireless communication system is a transmitting-side or a receiving-side of a reservation communication, the wireless communication system transmits beacon information that describes information regarding the guaranteed period.

54. (currently amended) The system according to claim 53, wherein the computer program instructions further comprise:

storing a guaranteed-period setting request received from another one of the wireless communication apparatuses,

wherein, the step of issuing the notification indicating the setting of the guaranteed-period includes setting its own guaranteed period while avoiding a guaranteed period that is already set by the another communication apparatus, and

the step of executing communication in the predetermined bandwidth is not performed in the guaranteed period set by the another communication apparatus.

55. (cancelled)